

CSCAPE 2005: NOAA Ship *David Starr Jordan*
Weekly Science Report – Leg 3

25 August 2005

Susan Chivers – Cruise Leader

SCIENCE SUMMARY: 18 – 24 August 2005

The first day of this week coincided with our arrival in Newport, OR. We arrived in the morning and immediately began preparations for the next leg by taking on fuel for the next leg; two tanker trucks were alongside the pier to refuel the ship. Officers, crew and scientists enjoyed a pier-side BBQ Thursday evening to celebrate the conclusion of Leg 2. We had two full days in port to relax, refresh and reprovision for the next leg. We departed Newport, OR on Sunday morning (8/21).

The seas were calm and as we departed Newport's harbor we saw lots of harbor porpoise (*Phocoena phocoena*). We saw many small groups of animals as well as a number of mother-calf pairs. We transited south along the Oregon coast to the start of Leg 3's survey grid.

Our first sighting once we were on effort was a blue whale. We were able to get good photographs of the whale that will be used to determine whether it is a known animal. That is, an animal that has been previously sampled and is part of a photo-id catalog.

That was an exciting start to our cruise leg, but I get ahead of myself. We have a few new faces making up the CSCAPE team this leg. Each replaces a team member who left us in Newport. Jim Gilpatrick from the SWFSC joins the CSCAPE marine mammal observer team, Scott Mills from Olympia, WA sailed on the R/V McArthur II CSCAPE survey of the Olympic Coast National Sanctuary, and now joins Thomas Staudt to survey sea birds, Maureen Barrett joins us as our teacher-at-sea from the University of Rhode Island Armada Project, and Mari Rosales also from the SWFSC joins us as the independent marine mammal observer.

The blue whales sighting was a sign of things to come over the next few days. We had multiple sightings of large whales, and during each of our first three days of effort, we added a new species of large whale to our list of sightings for the leg. Our species list includes humpback whale, sperm whale, fin whale, killer whale, and Baird's beaked whale in addition to the blue whale. We collected identification quality photographs of the humpback, sperm, fin, and killer whales in addition to general photographs for each of the species. Our most memorable sighting of the week was the pod of Baird's beaked whales. In addition to some great photographs of the animals, a great acoustic recording was made from the hydrophone mounted on the bow and two skin samples were collected for our genetics work. Notably absent from our list are any small or mid-sized delphinids. Well, we did have one sighting of dolphins but were unable to identify them to species early in the week. Will we encounter any herds of dolphins as we head offshore and to the south? Stay tuned for next week's report.

Sightings and Effort Summary for Marine Mammals

Date	Start/Stop Time	Position	Total Distance	Avg. Beaufort
082105	1402	N44:07.46 W124:13.71	34.2 nmi	2.8
	1904	N43:29.51 W124:30.06		
082205	0641	N43:30.96 W124:33.62	53.4 nmi	4.9
	2004	N43:53.14 W126:20.04		
082305	1212	N43:11.11 W128:31.49	27.0 nmi	3.9
	1920	N43:52.51 W128:18.73		
082405	1220	N44:16.25 W128:36.63	14.9 nmi	5.9
	1400	N44:20.14 W128:56.72		

CODE	SPECIES	WEEKLY TOTAL#	CSCAPE TOTAL#
005	Unidentified common dolphin	-	1
017	Short-beaked common dolphin	-	12
018	Bottlenose dolphin	-	4
021	Risso's dolphin	-	51
022	Pacific white-sided dolphin	-	88
027	Northern right whale dolphin	-	26
037	Killer whale	1	9
040	Harbor porpoise	7	76
044	Dall's porpoise	4	140
046	Sperm whale	3	16
049	Unidentified beaked whale	-	1
051	Mesoplodon sp.	-	4
061	Cuvier's beaked whale	-	2
063	Baird's beaked whale	1	2
069	Gray whale	-	2
070	Unidentified rorqual	1	10
071	Minke whale	-	7
074	Fin whale	3	36
075	Blue whale	1	34
076	humpback whale	5	364
077	unid. dolphin	1	36
078	unid. medium dolphin	-	1
078	unid. small whale	1	3
079	unid. large whale	-	39
096	unid. cetacean	-	2
	TOTAL	29	967

Note: Pinnipeds not included; mixed groups are counted once for each species.

Biopsies (Gary Friedrichsen, Laura Morse, Holly Fearnbach)

While quantity of skin samples collected was low, quality was high. We managed to obtain two skin biopsies for the group of Baird's beaked whales we encountered and one was large enough to process for cell culture. The skin samples will enable a genetic component to be added to the photographic documentation of the sighting and the acoustic recording made.

Species	Weekly	CSCAPE Total
Humpback whale	-	18
Baird's beaked whale	2	2
Blue whale	-	7
Fin whale	-	1
Sperm whale	-	11
Short-beaked common dolphin	-	1
Pacific white-sided dolphin	-	21
Northern right whale dolphin	-	6
Dall's porpoise	-	3
Killer whale	-	5
Risso's dolphin	-	4
GRAND TOTAL	2	79



Figure 1. While boat drive Jose Coito and URI teacher-at-sea Maureen Barrett keep their eyes on the whale, Gary Friedrichsen and Laura Morse prepare to collect skin samples with the crossbow, and Holly Fearnbach awaits the perfect photo opportunity. This sighting of Baird's beaked whales was made on 23 August 2005 at 43° 40.9'N 128° 22.4'W. See the CSCAPE website for a clip of the acoustic recording.

Photo-Project (Annie Douglas, Holly Fearnbach, Cornelia Oedekoven)

The kick-off for Leg 3 was very promising. Although we only include four days in this report (the first three days of this week were spent recuperating in port) and we were only on effort for roughly half of that time due to bad weather conditions, quite the variety of whales presented themselves to have their pictures taken. It started with a blue whale the first afternoon followed by a two single humpback whales in the evening, the latter one showing its fluke finally when the sun was setting. The next morning we started effort where we ended the night before and within minutes spotted a humpback whale which turned out to be our sunset whale from the evening before. Surprise! Fluke pictures were matched easily and Ensign Sean Finney used his magic program to calculate that the whale had moved 3.3 nm at a bearing of 340° over night. Later in the morning we encountered a group of killer whales and spent an hour with them to get pictures from the ship. Holly took a closer look at the 280 pictures taken during this sighting and figured out that there were eight whales in this group, including three males and two calves. In the afternoon we got two more humpback whale ids. The next morning started out with a sperm whale sighting and we set off in the small boat to get pictures and biopsies. Since the weather conditions were a bit rougher, it felt like buckets of saltwater were being dumped over the small boat and its occupants while rushing over to the clusters of sperm whales respirating at the surface. Despite the rain and the fog adding to the challenging conditions in the small boat (and shooting from the second row behind the biopsy team), we managed to get two ids. If that was not enough fun yet for the day, the best part was still ahead. Just before dinner time Annie spotted a group of Baird's beaked whales that was moving rapidly through the water. They came within a few hundred meters of the ship and the small boat was launched again. With photographic efforts from the flying bridge and the small boat combined, we got nice pictures of their heads and dorsals - and of a partial fluke and a pectoral fin as some of them were rolling around at the surface. On the last day included in this report, we were off effort almost all day because of high winds and only added one fin whale id to our collection.

<u>Species</u>	<u>Weekly</u>	<u>CSCAPE Total</u>
Humpback whale IDs	4	86
Blue whale IDs	1	28
Fin whale IDs	1	16
Sperm whale IDs	2	1
Killer whale IDs	8	61
Baird's beaked whales*	1	2
Short-beaked common dolphins*	-	5
Bottlenose dolphins*	-	1
Northern right whale dolphins*	-	7
Pacific white-sided dolphins*	-	13
Risso's dolphins*	-	9
Dall's porpoise*	-	2

*number of groups photographed



Figure 2. This male killer whale was one of three in a group of eight sighted on 22 August 2005 at 43 ° 35.2'N 123 ° 55.4'W

Bird Buzz (Scott Mills and Thomas Staudt)

As expected, inshore waters had a greater number and diversity of birds than offshore waters. The last day, which was spent more than 150 nm offshore was especially quiet with a total number of sightings less than 40. This total includes birds seen off the transect as well as on. Contrary to our expectations a number of Common Murres were seen with chicks south of Newport, Oregon. No unexpected species have been identified thus far, though two ducks, apparently Green-winged Teal, were seen more than 150 miles offshore. Buller's Shearwater has been the most frequently observed species in deep water. Despite the relatively small numbers of birds, we have greatly enjoyed the large number of whales encountered so far.

The Squeakly Report (Liz Zele)

After many a failed sonobuoy and unwilling vocal participants, we finally obtained some wonderful recordings! On August 23rd, our sighting of *Berardius* turned out to be an all around success as we managed to record them on the Jordan bow hydrophone. Even more stunning is the successful (finally!) deployment of a sonobuoy that also managed to pick up the very vocally excited beaked whales. We've sent along a short click of our chatty friends so make sure to listen!

Oceanographic Operations (Candice Hall, Liz Zele)

After a relaxing and interesting inport in Newport, the Oceanography team was ready to face leg 3. All of leg 2's hard work has paid off with everything working smoothly. Although the ADCP seems to be up and running, the ET is not entirely confident in the ADCP Navigation data so we'll be focusing on that this week.

Temperature-wise we've ranged all over the show, leaving the chilly 11° C (52° F) waters off Newport, to be emerged in balmy 17° – 18° C (62° – 65° F) waters offshore. Typically our bongo samples have shown an inverse relationship to the water temperature (or should I say

depth!), with very large samples near the coast that have dwindled offshore. Sadly our bongo sample microscope sessions have been postponed until the leg is in full swing but hopefully our next report will contain more secrets from the deep.

Our parting thought for the week: 'Experience is not what happens to you, it's what you do with what happens to you' (Aldous Huxley, as quoted by the DSJ CO).

Date	CTD's	Bongo tows	XBT's	Comments
08/18				In Newport
08/19				In Newport
08/20				In Newport
08/21	0	1	3	First day of Leg 3
08/22	2	1	4	
08/23	1	1	4	
08/24	1	1	4	